PCT09

#5

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                    RAW SEQUENCE LISTING                DATE: 09/10/2001
                    PATENT APPLICATION:  US/09/914,001  TIME: 11:28:54

                    Input Set : A:\Methy11.app
                    Output Set: N:\CRF3\09102001\I914001.raw

    3 <110> APPLICANT: Wisconsin Alumni Research Foundation et al.
    4         Pioneer Hi-Bred, International Inc.
    5         Regents of The University of Minnesota
    6         Kaeppler, Shawn M.
    7         Springer, Nathan M.
    8         Muszynski, Michael G.
    9         Papa, Charles M.
   11 <120> TITLE OF INVENTION: Nucleic Acid and Amino Acid Sequences Encoding Class II
   12        DNA Methyltransferases
   14 <130> FILE REFERENCE: WIS4987P0051PCT
C--> 16 <140> CURRENT APPLICATION NUMBER: US/09/914,001
C--> 17 <141> CURRENT FILING DATE: 2001-08-20
   19 <160> NUMBER OF SEQ ID NOS: 90
   21 <170> SOFTWARE: PatentIn Ver. 2.1
   23 <210> SEQ ID NO: 1
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   25 <212> TYPE: DNA
   26 <213> ORGANISM: Zea mays
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   31 tccgccaagc gcagccgcaa ggcggcatct tccgggaaga agcccaagtc gcccccaag 180
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   42 gtgcttgatt gcattatctc caaggtcaag atagtccatg ttgatccaaa tatggatcca 840
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   55 agtgggttta atcggtacag aaaccgtgat gagccactca aagtagaaa aaacaaacaa 1620
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                RAW SEQUENCE LISTING                DATE: 09/10/2001
                PATENT APPLICATION:  US/09/914,001  TIME: 11:28:54

                Input Set : A:\Methy11.app
                Output Set: N:\CRF3\09102001\I914001.raw
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59 cagttcagga tgcgtgtgtt cctctggggt gctctttctt ccatggtgct ccctaagtat 1860
60 cctctgccca cctatgatgt tgtagtacgt ggaggagccc ctaatgcctt ttcgcaatgt 1920
61 atggttgcat atgacgagac acaaaaacca tccctgaaaa aagccttgct tcttggcgat 1980
62 gcaatttcag atttaccaaa ggttcaaaat caccagccta acgatgtgat ggagtatggt 2040
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93 gacgtctatg tcaaggctgg agaaaacgag gcagattaca ttggccgcat tactgaattt 660
94 tttgagggga ctgacagtg tcactatttt acttgccgtt ggttcttccg agcagaggac 720
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98 gacctatact atgacatgtc ttactctgtt gcatattcta catttgctaa tatctcgtct 960
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105 gatgaagaca gccctcttga caaggacgaa tttgttgtag agaagcttgt cgggatatgt 1380
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107 cctgaggagg atacatggga accgattgat aacttgagtg actgcccgca gaaaattaga 1500
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                    PATENT APPLICATION:  US/09/914,001    TIME: 11:28:54

                    Input Set : A:\Methyl1.app
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125 ggcttccccg attactaccg attgtttggc ccgatcaagg agaagtacat tcaagtcggg 2580
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144 Glu Glu Glu Val Gly Ala Ala Ala Ser Ser Ala Lys Arg Ser Arg Lys
145        35                  40                  45
147 Ala Ala Ser Ser Gly Lys Lys Pro Lys Ser Pro Pro Lys Gln Ala Lys
148     50                  55                  60
150 Pro Gly Lys Lys Lys Gly Asp Ala Glu Met Lys Glu Pro Val Glu Asp
151   65                  70                  75                  80
153 Asp Val Cys Ala Glu Glu Pro Asp Glu Glu Glu Leu Ala Met Gly Glu
154                     85                  90                  95
156 Glu Glu Ala Glu Glu Gln Ala Met Gln Glu Glu Val Val Ala Val Ala
157                100                 105                 110
159 Ala Gly Ser Pro Gly Lys Lys Arg Val Gly Arg Arg Asn Ala Ala Ala
160        115                 120                 125
162 Ala Ala Gly Asp His Glu Pro Glu Phe Ile Gly Ser Pro Val Ala Ala
163     130                 135                 140
165 Asp Glu Ala Arg Ser Asn Trp Pro Lys Arg Tyr Gly Arg Ser Thr Ala
166 145                 150                 155                 160
168 Ala Lys Lys Pro Asp Glu Glu Glu Glu Leu Lys Ala Arg Cys His Tyr
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                    RAW SEQUENCE LISTING              DATE: 09/10/2001
                    PATENT APPLICATION:  US/09/914,001   TIME: 11:28:54

                    Input Set : A:\Methyl1.app
                    Output Set: N:\CRF3\09102001\I914001.raw

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175           195                 200                 205
177 Glu Phe Phe Glu Gly Thr Asp Gln Cys His Tyr Phe Thr Cys Arg Trp
178 210                           215                 220
180 Phe Phe Arg Ala Glu Asp Thr Val Ile Asn Ser Leu Val Ser Ile Ser
181 225                           230                 235                 240
183 Val Asp Gly His Lys His Asp Pro Arg Arg Val Phe Leu Ser Glu Glu
184           245                 250                 255
186 Lys Asn Asp Asn Val Leu Asp Cys Ile Ile Ser Lys Val Lys Ile Val
187           260                 265                 270
189 His Val Asp Pro Asn Met Asp Pro Lys Ala Lys Ala Gln Leu Ile Glu
190           275                 280                 285
192 Ser Cys Asp Leu Tyr Tyr Asp Met Ser Tyr Ser Val Ala Tyr Ser Thr
193           290                 295                 300
195 Phe Ala Asn Ile Ser Ser Glu Asn Gly Gln Ser Gly Ser Asp Thr Ala
196 305                           310                 315                 320
198 Ser Gly Ile Ser Ser Asp Asp Val Asp Leu Glu Thr Ser Ser Ser Met
199           325                 330                 335
201 Pro Thr Arg Thr Ala Thr Leu Leu Asp Leu Tyr Ser Gly Cys Gly Gly
202           340                 345                 350
204 Met Ser Thr Gly Leu Cys Leu Gly Ala Ala Leu Ser Gly Leu Lys Leu
205           355                 360                 365
207 Glu Thr Arg Trp Ala Val Asp Phe Asn Ser Phe Ala Cys Gln Ser Leu
208 370                           375                 380
210 Lys Tyr Asn His Pro Gln Thr Glu Val Arg Asn Glu Lys Ala Asp Glu
211 385                           390                 395                 400
213 Phe Leu Ala Leu Leu Lys Glu Trp Ala Val Leu Cys Lys Lys Tyr Val
214           405                 410                 415
216 Gln Asp Val Asp Ser Asn Leu Ala Ser Ser Glu Asp Gln Ala Asp Glu
217           420                 425                 430
219 Asp Ser Pro Leu Asp Lys Asp Glu Phe Val Val Glu Lys Leu Val Gly
220           435                 440                 445
222 Ile Cys Tyr Gly Gly Ser Asp Arg Glu Asn Gly Ile Tyr Phe Lys Val
223           450                 455                 460
225 Gln Trp Glu Gly Tyr Gly Pro Glu Glu Asp Thr Trp Glu Pro Ile Asp
226 465                           470                 475                 480
228 Asn Leu Ser Asp Cys Pro Gln Lys Ile Arg Glu Phe Val Gln Glu Gly
229           485                 490                 495
231 His Lys Arg Lys Ile Leu Pro Leu Pro Gly Asp Val Asp Val Ile Cys
232           500                 505                 510
234 Gly Gly Pro Pro Cys Gln Gly Ile Ser Gly Phe Asn Arg Tyr Arg Asn
235 515                           520                 525
237 Arg Asp Glu Pro Leu Lys Asp Glu Lys Asn Lys Gln Met Val Thr Phe
238 530                           535                 540
240 Met Asp Ile Val Ala Tyr Leu Lys Pro Lys Tyr Val Leu Met Glu Asn
241 545                           550                 555                 560
243 Val Val Asp Ile Leu Lys Phe Ala Asp Gly Tyr Leu Gly Lys Tyr Ala
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                     RAW SEQUENCE LISTING                    DATE: 09/10/2001
                     PATENT APPLICATION:  US/09/914,001      TIME: 11:28:54

                     Input Set : A:\Methyl1.app
                     Output Set: N:\CRF3\09102001\I914001.raw

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249 Val Ala Gly Cys Tyr Gly Leu Pro Gln Phe Arg Met Arg Val Phe Leu
250               595                 600                 605
252 Trp Gly Ala Leu Ser Ser Met Val Leu Pro Lys Tyr Pro Leu Pro Thr
253      610                 615                 620
255 Tyr Asp Val Val Val Arg Gly Gly Ala Pro Asn Ala Phe Ser Gln Cys
256 625                 630                 635                 640
258 Met Val Ala Tyr Asp Glu Thr Gln Lys Pro Ser Leu Lys Lys Ala Leu
259               645                 650                 655
261 Leu Leu Gly Asp Ala Ile Ser Asp Leu Pro Lys Val Gln Asn His Gln
262               660                 665                 670
264 Pro Asn Asp Val Met Glu Tyr Gly Gly Ser Pro Lys Thr Glu Phe Gln
265      675                 680                 685
267 Arg Tyr Ile Arg Leu Ser Arg Lys Asp Met Leu Asp Trp Ser Phe Gly
268      690                 695                 700
270 Glu Gly Ala Gly Pro Asp Glu Gly Lys Leu Leu Asp His Gln Pro Leu
271 705                 710                 715                 720
273 Arg Leu Asn Asn Asp Asp Tyr Glu Arg Val Gln Gln Ile Pro Val Lys
274               725                 730                 735
276 Lys Gly Ala Asn Phe Arg Asp Leu Lys Gly Val Arg Val Gly Ala Asn
277               740                 745                 750
279 Asn Ile Val Glu Trp Asp Pro Glu Ile Glu Arg Val Lys Leu Ser Ser
280      755                 760                 765
282 Gly Lys Pro Leu Val Pro Asp Tyr Ala Met Ser Phe Ile Lys Gly Lys
283      770                 775                 780
285 Ser Leu Lys Pro Phe Gly Arg Leu Trp Trp Asp Glu Thr Val Pro Thr
286 785                 790                 795                 800
288 Val Val Thr Arg Ala Glu Pro His Asn Gln Val Ile Ile His Pro Thr
289               805                 810                 815
291 Gln Ala Arg Val Leu Thr Ile Arg Glu Asn Ala Arg Leu Gln Gly Phe
292               820                 825                 830
294 Pro Asp Tyr Tyr Arg Leu Phe Gly Pro Ile Lys Glu Lys Tyr Ile Gln
295      835                 840                 845
297 Val Gly Asn Ala Val Ala Val Pro Val Ala Arg Ala Leu Gly Tyr Cys
298      850                 855                 860
300 Leu Gly Gln Ala Tyr Leu Gly Glu Ser Glu Gly Ser Asp Pro Leu Tyr
301 865                 870                 875                 880
303 Gln Leu Pro Pro Ser Phe Thr Ser Val Gly Gly Arg Thr Ala Gly Gln
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314 <211> LENGTH: 922
315 <212> TYPE: PRT
316 <213> ORGANISM: Zea mays
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VERIFICATION SUMMARY   DATE: 09/10/2001
PATENT APPLICATION: US/09/914,001   TIME: 11:28:55

Input Set : A:\Methyl1.app
Output Set: N:\CRF3\09102001\I914001.raw

L:16 M:270 C: Current Application Number differs, Replaced Current Application Number
L:17 M:271 C: Current Filing Date differs, Replaced Current Filing Date